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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,330	07/30/2001	Akira Fukunaga	FUKUNAGA=5	9513
1444 7:	590 10/07/2003		EXAMINER	
BROWDY AND NEIMARK, P.L.L.C.			LEE, CALVIN	
624 NINTH STREET, NW SUITE 300 WASHINGTON, DC 20001-5303			ART UNIT	PAPER NUMBER
			2825	- · · ·

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

1) Responsive to communication(s) filed on <a href="https://doi.org/10.10/10.10/10.10/">11 September 2003</a> .  2a) This action is FINAL.  2b) This action is non-final.  3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) Claim(s) 1-15 is/are pending in the application.  4a) Of the above claim(s) 9-15 is/are withdrawn from consideration.  5) Claim(s) 3-6 is/are allowed.  6) Claim(s) 1,2,7 and 8 is/are rejected.  7) Claim(s) is/are objected to.  8) Claim(s) are subject to restriction and/or election requirement.			<u>/</u>					
Examiner   Lee Calvin   Lee C		Application No.	Applicant(s)					
Lee Calvin  -The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.  THE MAILING DATE OF THIS COMMUNICATION and the provided of the communication and the provided of the communication.  If the period for reply specified above is less than thirty (30) days, a reply within the statutory reminime of thirty (30) days will be considered timely.  If the period for reply specified above is less than thirty (30) days, a reply within the statutory reminime of thirty (30) days will be considered timely.  If the period for reply specified above is less than thirty (30) days, a reply within the statutory reminime of thirty (30) days will be considered timely.  If the period for reply specified above, the manterina attention part of the provided of the communication.  If the period for reply specified above, the manterina attention part of the statutory reminime of thirty (30) days will be considered timely.  If the period for reply specified above, the manterina days will be considered timely.  If the period for reply specified and statutory and the statutory reminiment of thirty (30) days will be considered timely.  If the period for reply specified and statutory and the statutory reminiment of thirty (30) days will be considered timely.  If the period for reply specified and statutory and the statutory reminiment of thirty (30) days will be considered timely.  If the period of the statutory and the statutory reminiment of thirty (30) days will be considered timely.  If the period of the statutory and the statutor	-	09/890,330	FUKUNAGA ET AL.					
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Application No: 09/890,330 Docket No: FUKUNAGA.5

#### **OFFICE ACTION**

### Response to Elections

1. Applicant's election without traverse of claim 1-8, dated 9/11/03 is acknowledged.

# Claim Objection

Claim 1 is objected to because of the following informality:In claim 1, line 12, replace "and bond metal" with -- and to bond metal particles--

# Claim Rejections - 35 U.S.C. § 102

- 3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
- 4. Claims 1-2 and 7-8 are rejected under 35 U.S.C. 102(e) as being anticipated by *Horie et al* (US 6,517,642).

Horie et al discloses a method of forming a thin metal film, comprising:

- preparing a dispersed liquid having a metal-containing organic compound/powder [col. 3, ln.47] dispersed in a predetermined solvent [col. 4, ln.38],
- coating said dispersed liquid on a surface of a substrate [Fig. 3 and col. 4, ln.54]
- evaporating the solvent to form a coating layer [col. 5, ln.35]
- applying an energy beam (i.e., laser beam) [col. 5, ln.59] in air [col. 9, ln.65] to said coating layer to decompose away an organic substance contained in said coating layer in an area irradiated with the energy beam and to bond metal particles contained in said coating layer

In re claim 8, *Horie et al* even discloses a semiconductor device having interconnects formed by the method of forming a thin metal film [col. 1].

### Allowable Subject Matter

5. Claims 3-6 are allowed because *Horie et al* fails to disclose dissolving away the metal-containing organic compound left on the surface of the substrate with a solvent.

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FUKUNAGA et al.

#### Conclusion

- 6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Watanabe et al (US 5,966,580) discloses a process for making a thin metal film using ultrafine metal particles dispersed in an organic solvent then coating, drying and sintering it on a substrate's surface [col. 5]; Ando et al (US 5,993,701) discloses a method for decomposing a metal salt of organic acid, a metal oxide (or nitrate), vapor-phase chemical deposition methods such as by an electric furnace method which is disclosed in "Particulates Handbook (Fuji Techno System)" a chemical furnace method, a plasma method, a laser method, and a high voltage pulse discharge method, vapor-phase physical deposition methods such as by a sputter deposition method, a vacuum evaporation method, a resistance heating method, a high frequency induction method, a plasma method, an electron beam heating method, and a laser beam heating method [col. 5]; and Nagasawa et al (US 6,358,611) discloses a process for producing particles comprising an organometallic core.
- 7. Any inquiry concerning this communication from the examiner should be directed to *Calvin Lee* at (703) 306-5854 from 7:00 to 17:00 (Mo-Th). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor *Matthew Smith* can be reached at (703) 308-1323.

Any inquiry relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1782. The fax phones are (703) 872-9318 for regular communications and (703) 872-9319 for After-Final communications.

CL

CARIDAD EVERYALT PRIMARY EXAMINED

September 24, 2003